
Preliminary Science Flight Report

Operation IceBridge Antarctica 2011



Flight: GV-FL06
Mission: LVIS-Evans2

Flight Report Summary

Aircraft	NSF G-V (N677F)
Flight Number	6
Flight Request	118003
Date	Wednesday October 15 th , 2011, DOY 288
Purpose of Flight	Operation IceBridge Mission, LVIS Evans2
Take off time	8:28 local time from Punta Arenas (SCCI)
Landing time	18:50 local time at Punta Arenas (SCCI) on October 15, 2011
Flight Hours	10.5
Aircraft Status	Airworthy.
Sensor Status	All installed sensors operational.
Significant Issues	None
Accomplishments	<ul style="list-style-type: none">• High-altitude survey (~42,000 ft pressure altitude) of grid lines• Completed mission as planned.• Conducted roll and pitch maneuvers for calibration at start/end of flight
Geographic Keywords	Antarctica, Evans Ice Stream, Drewry Ice Stream, West Antarctic Ice Sheet, WAIS
ICESat/CryoSat Track	Grid lines cross numerous Icesat tracks
Repeat Mission	Overlap with previous IceBridge data at Evans Ice Stream

Science Data Report Summary

Instrument	Instrument Operational			Data Volume	Instrument Issues
	Survey Area	Entire Flight	High-alt. Transit		
LVIS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	50 GB	None
POS/AV (510 + 610)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	5 GB	None
LVIScameras(2)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	25 GB	None
G-V Onboard Data	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	40 MB	None

Mission Report (Michelle Hofton: Mission Scientist, Instrument Operators: David Rabine, Shane Wake)

The fifth LVIS G-V flight surveyed a series of lines centered at the Evans Ice Stream plus transit lines to and from the survey area. Five, ~350km long grid lines, spaced ~20km apart and extending the Evans-1 survey grid from 10/12/11 were completed. All planned lines were surveyed, a total of ~3,000 lineal km, ~6,000 km² mapped. The survey is part of the overall deployment plan to collect grid data over a large region that encompasses the entire Antarctic Peninsula to the Getz Coast.

Weather models predicted a small cloud free area in the vicinity of the Drewry/Evans ice streams extending north for about 200km and moving north throughout the day. Although the weather forecaster at Punta Arenas could not confirm, the flight was launched to try to take advantage of the predicted hole with selection of the final flight lines to be made based on the conditions in the area. Transit to the area was cloudy, however working with members of the LVIS ground support team via xchat the flight team were able to select a start line for the beginning of the survey that would enable both a test of the extent of the northern boundary of the cloud hole with respect to the lines, and an easy transit to the grid lines to the clearer south west. With 60% coverage on the first survey line (with the clouds at the north end of the survey line), the survey moved to grid lines further into the cloud hole to continue the LVIS mapping of the Evans and Drewry ice streams begun on 10/12/11. Five additional grid lines over Evans were imaged and two crossing lines were also included to allow for continued monitoring of LVIS data precision. The five Evans lines and 2 crossing lines were all mapped with 100% coverage. Transit from the survey area via the George VI ice shelf was also clear (to partially hazy) allowing for data collection during this portion of the flight.

The LVIS sensor worked very well. Data was successfully collected over the survey lines (100% of the five Evans/Drewry lines and 2 crossing lines, and 60% of the initial line) and on the transit from the target area. The camera was operated in cloud free areas. Some sea ice data were collected close to Alexander island.

Roll and pitch maneuvers were carried out on the transit to/from Antarctica.

Individual instrument reports from experimenters on board the aircraft:

LVIS: The LVIS system worked well.

POS/AV: Systems worked well. No issues.

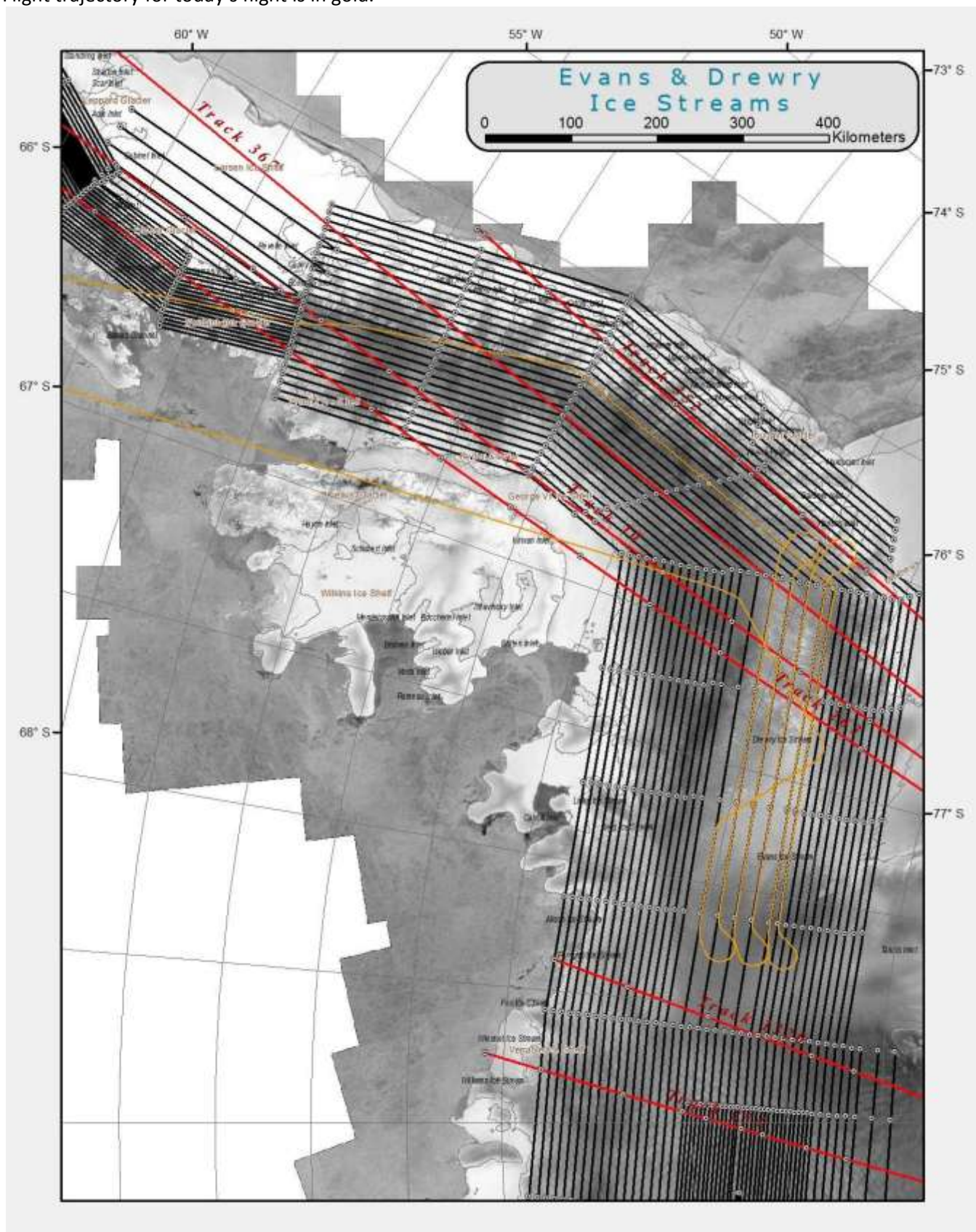
LVIScam: System worked well. No issues.

G-V on board data: System worked well.

Pictures during the mission today
(Photo credit: Michelle Hofton)



Flight trajectory for today's flight is in gold.



Flight Hours Summary

Flight	Date	Aircraft Flight #	Data Flight#	Duration (hr)	Running Total(hr)	Remaining Science Hours*
						100.00
PUQ-PUQ	10/07/11	RF01	GV-FL01	10.7	10.7	89.3
PUQ-PUQ	10/08/11	RF02	GV-FL02	10.4	21.1	78.9
PUQ-PUQ	10/10/11	RF03	GV-FL03	10.7	31.8	68.4
PUQ-PUQ	10/12/11	RF04	GV-FL04	10.3	42.1	58.4
PUQ-PMC	10/13/11	FF01	-	1.9		
PMC-PUQ	10/14/11	FF02	-	2.1		
PUQ-PUQ	10/14/11	RF05	GV-FL05	1.4	43.5	56.5
PUQ-PUQ	10/15/11	RF06	GV-FL06	10.5	54.0	46.0

* Extended science mission hours are available